

FORM PTO-1449 O I P E OCT 14 2003 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. CANNING.001CP2	APPLICATION NO. 10/619,798
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (USE SEVERAL SHEETS IF NECESSARY)		
APPLICANT Francis X. Canning		
FILING DATE July 15, 2003		
GROUP Unknown		

U.S. PATENT DOCUMENTS							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE (IF APPROPRIATE)
HD	1	5,548,798	08/20/96	King			
	2	5,615,288	03/25/97	Koshi, et al.			
	3	5,867,416	02/02/99	Feldmann, et al.			
↓	4	6,051,027	04/18/00	Kapur, et al.			
HD	5	6,064,808	05/16/00	Kapur, et al.			

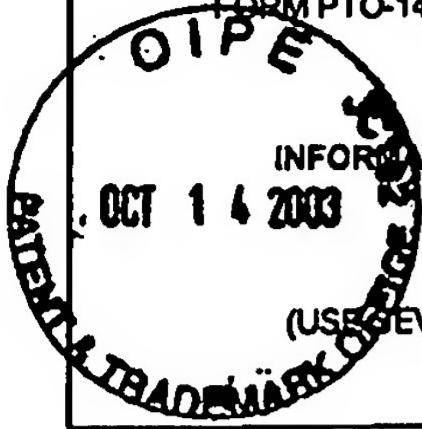
EXAMINER INITIAL	OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)	
HD	6	Kevin Amaratunga, "A Wavelet-Based Approach for Compressing Kernel Data in Large-Scale Simulations of 3D Integral Problems", Computing in Science & Engineering, July/August 2000, pp. 35-45
	7	Soren Anderson, "On Optimal Dimension Reduction for Sensor Array Signal Processing", Signal Processing, January 1993, pp. 245-256
	8	Boag, et al., "Complex Multiple Beam Approach to Electromagnetic Scattering Problems", IEEE Transactions on Antennas and Propagation, Vol. 42, No. 3, March 1994
	9	Borgiotti, et al., "The determination of the far field of an acoustic radiator from sparse measurement samples in the near field", Journal of the Acoustical Society of America, Vol. 92, August 1992, pp. 807-818
	10	Bornholdt, et al., "Mixed-Domain Galerkin Expansions in Scattering Problems", IEEE Transactions on Antennas and Propagation, Vol. 36, No. 2, February 1988, pp. 216-227
	11	Brandt, et al., "Multilevel Matrix Multiplication and Fast Solution of Integral Equations", Journal of Computational Physics, 1990, pp. 348-370
	12	Bucci, et al., "On the Degrees of Freedom of Scattered Fields", IEEE Transactions on Antennas and Propagation, Vol. 37, No. 7, July 1989, pp. 918-926
	13	Francis X. Canning, "The Impedance Matrix Localization (IML) Method for Moment-Method Calculations", IEEE Antennas and Propagation Magazine, Vol. 23, No. 5, October 1990, pp. 18-30
	14	Francis X. Canning, "Reducing Moment Method Storage from Order N^2 to Order N", Electronics Letters, Vol. 25, No. 19, September 1989, pp. 1274-1275
	15	Francis X. Canning, "Solution of Impedance Matrix Localization Form of Moment Method Problems in Five Iterations", Radio Science, Vol. 30, No. 5, Sept-Oct. 1995, pp. 1371-1384
	16	Francis X. Canning, "Fast Sparse Decomposition of Standard Moment Matrices", 1997 North American Radio Science Meeting, Program and Abstracts, July 1997, pp. 68-69
	17	Canning, et al., "Fast Direct Solution of Standard Moment-Method Matrices", IEEE Antennas & Propagation, Vol. 40, No. 3, June 1998, pp. 15-26
↓	18	Francis X. Canning, "Improved Impedance Matrix Localization Method", IEEE Transactions on Antennas and Propagation, Vol. 41, No. 5, May 1993, pp. 659-667
HD	19	Francis X. Canning, "A Fast Moment Method Matrix Solver", 14 th Annual Review of Progress in Applied Computational Electromagnetics, March 1998, pp. 449-454

EXAMINER	/Herng-der Day/	DATE CONSIDERED	06/25/2006
*EXAMINER: INITIAL IF CITATION CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP 609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED, INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.			

FORM PTO-1449 <i>OCT 14 2003</i> U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE INFORMATION DISCLOSURE STATEMENT BY APPLICANT (USE SEVERAL SHEETS IF NECESSARY)	ATTY. DOCKET NO. CANNING.001CP2	APPLICATION NO. 10/619,796
	APPLICANT Francis X. Canning	
	FILING DATE July 15, 2003	GROUP Unknown

EXAMINER INITIAL	OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)	
HD	20	Coifman, et al., "The Fast Multipole Method for the Wave Equation: A Pedestrian Prescription", IEEE Antennas and Propagation Magazine, Vol. 35, No. 3, June 1993, pp. 7-12
	21	Deng, et al., "Fast Solution of Electromagnetic Integral Equations Using Adaptive Wavelet Packet Transform", IEEE Transactions of Antennas and Propagation, Vol. 47, No. 4, April 1999, pp. 674-682
	22	Gothard, et al., "A New Technique to Generate Sparse Matrix Using the Method of Moments – Application to Two-Dimensional Problems", Presented at the URSI Meeting, June 1995, Newport Beach, California, Page 302 of the meeting digest
	23	Greengard, et al., "A Fast Algorithm for Particle Simulations", Journal of Computational Physics, Vol. 73, No. 2, December 1987, pp. 325-348
	24	Gabriel F. Hermann, "Note on Interpolational Basis Functions in the Method of Moments", IEEE Transactions on Antennas and Propagation, Vol. 38, No. 1, January 1990, pp. 134-137
	25	Kapur, et al., "Efficient Full-Wave Simulation in Layered, Lossy Media", Custom Integrated Circuits Conference, May 11-14, 1998
	26	Kapur, et al., "IES ³ : A Fast Integral Equation for Efficient 3-Dimensional Extraction", International Conference on Computer-Aided Design, November 9-13, 1997
	27	Kapur, et al., "Efficient Electrostatic and Electromagnetic Simulation Using IES ³ ", IEEE Journal on Comp. Eng., December 1998
	28	Kapur, et al., "Efficient Three-Dimensional Extraction Based on Static and Full-Wave Layered Green's Functions", Design Automation Conference, June 16, 1998
	29	Kapur, et al., "High-Order Nyström Schemes for Efficient 3-D Capacitance Extraction", International Conference on Computer-Aided Design, November 8-12, 1998
	30	Kevorkian, et al., "Sparse Complete Orthogonal Factorization as Applied to Bistatic Target Strength Prediction", DOD High Performance Computing 7 th Users Group Conference, June 26, 1997
	31	Liu, et al., "Scattering of 2-D Conducting Concave Object by MoM Matrix Decomposition Technique", Microwave and Optical Technology Letters, Vol. 25, No. 2, April 20, 2000, pp. 149-152
	32	Michielssen, et al., "Multilevel Evaluation of Electromagnetic Fields for the Rapid Solution of Scattering Problems", Microwave and Optical Technology Letters, Vol. 7, No. 17, December 1994, pp. 790-795
	33	Michielssen, et al., "A Multilevel Matrix Decomposition Algorithm for Analyzing Scattering from Large Structures", IEEE, Vol. 44, No. 8, August 1996, pp. 1086-1093
	34	Michielssen, et al., "Reduced Representation of Matrices Generated by the Method of Moments", IEEE, Vol. 1, No. 94CH3466-0, June 1994, pp. 419-423
	35	Douglas M. Photiadis, "The Relationship of Singular Value Decomposition to Wave-Vector Filtering in Sound Radiation Problems", J. Acoust. Soc. Am. 88(2), August 1990, pp. 1152-1159
	36	Ronald J. Pogorzelski, "Improved Computational Efficiency via Near-Field Localization", IEEE Transactions on Antennas and Propagation, Vol. 41, No. 8, August 1993, pp. 1081-1087
	37	Rao, et al., "A New Technique to Generate Sparse matrix using the Method of Moments – Wire Scattering Problems", Presented at the URSI Meeting, June 1995, Newport Beach, California, page 303 of the meeting digest
✓	38	Rao, et al., "Generation of Adaptive Basis Functions to Create a Sparse Impedance Matrix Using Method of Moments", Presented at the URSI Meeting, July 20, 2000, Salt Lake City, Utah, page 254 of the meeting digest
HD	39	Rao, et al., "A New Technique to Generate a Sparse Matrix Using the Method of Moments for Electromagnetic Scattering Problems", Microwave and Optical Technology Letters, Vol. 19, No. 4, November 1998

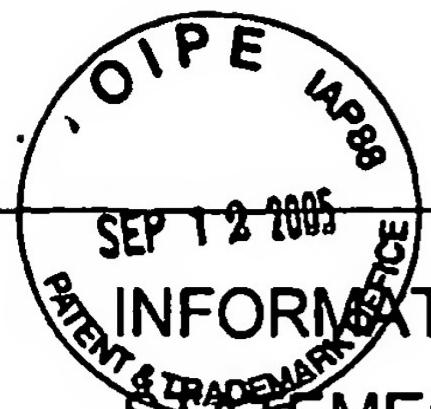
EXAMINER	/Herng-der Day/	DATE CONSIDERED	06/25/2006
*EXAMINER: INITIAL IF CITATION CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP 609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED. INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.			

 FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE INFORMATION DISCLOSURE STATEMENT BY APPLICANT OCT 14 2003 (USE SEVERAL SHEETS IF NECESSARY)	ATTY. DOCKET NO. CANNING.001CP2	APPLICATION NO. 10/619,796
	APPLICANT Francis X. Canning	
	FILING DATE July 15, 2003	GROUP Unknown

EXAMINER INITIAL	OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)	
HD	40	Rius, et al., "The Multilevel Matrix Decomposition Algorithm in 3-D" Proceedings of the International Conference on Electromagnetics in Advanced Applications, September 1999, pp. 728-732
	41	Rokhlin, et al., "Generalized Gaussian Quadratures and Singular Value Decompositions of Integral Operators", Research Report YALEU/DCS/RR-1109, May 1996
	42	Vladimir Rokhlin, "Sparse Diagonal Forms for Translation Operators for the Helmholtz Equation in Two Dimension", Research Report YALEU/DCS/RR-1095, December 1995
	43	Vladimir Rokhlin, "Diagonal Forms of Translation Operators for the Helmholtz Equation in Three Dimensions", Research Report YALEU/DCS/44-894, March 1992
	44	Schenck, et al., "A Hybrid Method for Predicting the Complete Scattering Function from Limited Data", J. Acoust. Am. 98(6), December 1995, pp. 3469-3481
	45	Wagner, et al., "A Ray-Propagation Fast Multipole Algorithm", Microwave and Optical Technology Letters, Vol. 7, No. 10, July 1994, pp. 435-438
▼	46	Zientara, et al., "Dynamic Adaptive MR Imaging Using Multi-Resolution SVD Encoding Incorporating Optical Flow-Based Predictions", Report of National Academy of Sciences Committee on the "Mathematics and Physics of Emerging Dynamic Biomedical Imaging", November 1993
HD	47	PCT International Search Report

H:\DOCS\IWHLWH-9232.DOC:Jd
092403

EXAMINER	/Herng-der Day/	DATE CONSIDERED	06/25/2006
*EXAMINER: INITIAL IF CITATION CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP 609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED. INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.			



INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Multiple sheets used when necessary)</i>		Application No.	10/619,796
		Filing Date	July 15, 2003
		First Named Inventor	Francis X. Canning
		Art Unit	2811
SHEET 1 OF 1		Examiner	Unknown
		Attorney Docket No.	CANNING.001CP2

U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No.	Document Number Number - Kind Code (if known) Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
HD	1	6,064,808	05-16-2000	Kapur et al.	
	2				
	3				
	4				
	5				
	6				
	7				
	8				

FOREIGN PATENT DOCUMENTS						
Examiner Initials	Cite No.	Foreign Patent Document Country Code-Number-Kind Code Example: JP 1234567 A1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear	T ¹
	9					
	10					
	11					
	12					
	13					

NON PATENT LITERATURE DOCUMENTS						
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.				T ¹
	14					
	15					

1913368
090205

Examiner Signature	/Herng-der Day/	Date Considered	06/25/2006
--------------------	-----------------	-----------------	------------

*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

T¹ - Place a check mark in this area when an English language Translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Multiple sheets used when necessary)</i>		Application No.	10/619,796
		Filing Date	July 15, 2003
		First Named Inventor	Francis X. Canning
		Art Unit	2811
SHEET 1 OF 1	Examiner	Unknown	
	Attorney Docket No.	CANNING.001CP2	

U.S. PATENT DOCUMENTS

Examiner Initials	Cite No.	Document Number Number - Kind Code (if known) Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
	1				
	2				
	3				
	4				
	5				
	6				

FOREIGN PATENT DOCUMENTS

Examiner Initials	Cite No.	Foreign Patent Document Country Code-Number-Kind Code Example: JP 1234567 A1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear	T ¹
	7					
	8					
	9					
	10					
	11					

NON PATENT LITERATURE DOCUMENTS

Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ¹
HD	12	KEITH NABORS and JACOB WHITE, "FastCap: A Multipole Accelerated 3-D Capacitance Extraction Program," IEEE Transactions on Computer Aided Design, Vol. 10, No. 11, November 1991, Pages 1447-1459	
	13		
	14		
	15		
	16		

1982132
101005

Examiner Signature	/Herng-der Day/	Date Considered	06/25/2006
--------------------	-----------------	-----------------	------------

*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

T¹ - Place a check mark in this area when an English language Translation is attached.